(10) International Publication Number
WO 2014/020521 A3

(51) International Patent Classification:
B60B 17/00 (2006.01)

(21) International Application Number:
PCT/IB20 13/056221

(22) International Filing Date:
29 July 2013 (29.07.2013)

(25) Filing Language:
Italian

(26) Publication Language:
English

(30) Priority Data:
BS2012A000124 30 July 2012 (30.07.2012) IT

(71) Applicant: LUCCHINI RS S.P.A. [IT/IT]; Via G. Paglia 45, 1-24065 Lovere (BG) (IT).


(74) Agent: BIESSE S.R.L.; (sesto piano), Via Corfu, 71, 1-25124 Brescia (BS) (IT).


Published:
— with international search report (Art. 21(3))
— before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))

(88) Date of publication of the international search report:
27 March 2014

(54) Title: RAILWAY WHEEL AND RESPECTIVE DAMPING ELEMENT

(57) Abstract: A railway wheel (10) for a vehicle comprises a rotation axis (11) and a supporting disk (11) which can be keyed or otherwise attachable on an axle at the rotation axis (11). The supporting disk (11) can be coupled with a wheel rim (13) intended for rolling on a rail. The wheel (10) provides damping means (20) of the wheel rim (13) with respect to the supporting disk (11) which comprise a plurality of elastic elements (25) interposed between the supporting disk (11) and the wheel rim (13), aside with respect to the median plane (10') of the wheel. Each elastic element (25) has its own geometrical axis (26) and comprises a first face (25a) facing the median plane (10') of the wheel (10) and a second face (25b) opposed to the first face (25a) and facing the opposite part with respect the median plane (10') of the wheel, so that the elastic element (25) extends its thickness between the two faces (25a, 25b). The first face (25a) and the second face (25b) of each elastic element (25) have the same concavity or the same convexity considered in cross section in any plane containing said geometrical axis (26). The elastic elements (25) are designed to obtain the effective damping of any stress transmitted from the wheel motion on the rail, and to increase the lifetime of the elastic element (25) itself.
**INTERNATIONAL SEARCH REPORT**

**A. CLASSIFICATION OF SUBJECT MATTER**

INV. B6QB17/00

ADD.

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)

B60B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

<table>
<thead>
<tr>
<th>Category</th>
<th>Citation of document, with indication, where appropriate, of the relevant passages</th>
<th>Relevant to claim No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>DE 845 961 C (HAERTER LUDWIG) 7 August 1952 (1952-08-07) page 2, line 23 - line 45; figures 1, 2</td>
<td>1-21</td>
</tr>
<tr>
<td>A</td>
<td>US 2 911 252 A (TEMPLETON HERBERT W) 3 November 1959 (1959-11-03) figure 2</td>
<td>1-21</td>
</tr>
<tr>
<td>A</td>
<td>US 2 511 279 A (AUGUST MALMOQUIST NILS GUNNAR) 13 June 1950 (1950-06-13) col umn 2, line 4 - line 37</td>
<td>1, 21</td>
</tr>
<tr>
<td>A</td>
<td>FR 2 150 532 AI (BROMSREGULATOR SVENSKA AB BROMSREGULATOR SVENSKA AB [SE]) 6 April 1 1973 (1973-04-06) page 4, line 1 - line 27; figure 1</td>
<td>1, 21</td>
</tr>
</tbody>
</table>

* Special categories of cited documents:
  * "A" document defining the general state of the art which is not considered to be of particular relevance
  * "E" earlier application or patent but published on or after the international filing date
  * "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
  * "O" document referring to an oral disclosure, use, exhibition or other means
  * "P" document published prior to the international filing date but later than the priority date claimed
  * "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
  * "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
  * "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
  * "Z" document member of the same patent family

**Date of the actual completion of the international search** 9 January 2014

**Date of mailing of the international search report** 28/01/2014

**Name and mailing address of the ISA/ European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016**

**Authorized officer** Cipriano, Pedro
<table>
<thead>
<tr>
<th>Patent document cited in search report</th>
<th>Publication date</th>
<th>Patent family member(s)</th>
<th>Publication date</th>
</tr>
</thead>
<tbody>
<tr>
<td>DE 845961</td>
<td>07-08-1952</td>
<td>NONE</td>
<td></td>
</tr>
<tr>
<td>US 2911252</td>
<td>03-11-1959</td>
<td>NONE</td>
<td></td>
</tr>
<tr>
<td>US 2511279</td>
<td>13-06-1950</td>
<td>NONE</td>
<td></td>
</tr>
<tr>
<td>FR 2150532</td>
<td>06-04-1973</td>
<td>DE 2142774 Al</td>
<td>08-03-1973</td>
</tr>
<tr>
<td>FR 2150532</td>
<td>06-04-1973</td>
<td>GB 1364135 A</td>
<td>21-08-1974</td>
</tr>
</tbody>
</table>